SSC
iODNCP V100R001C10

Product Description

Issue   01

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HUAWEI TECHNOLOGIES CO., LTD.

Huawei Technologies Co., Ltd.

Contents

1 About This Document

Related Versions

The following table lists the product versions related to this document.

Product Name	Version

Symbol Conventions

The symbols that may be found in this document are defined as follows.

Symbol	Description
DANGER	Indicates a hazard with a high level of risk, which if not avoided, will result in death or serious injury.
WARNING	Indicates a hazard with a medium or low level of risk, which if not avoided, could result in minor or moderate injury.
CAUTION	Indicates a potentially hazardous situation, which if not avoided, could result in equipment damage, data loss, performance degradation, or unexpected results.
NOTE	Provides additional information to emphasize or supplement important points of the main text.

Change History

Updates between document issues are cumulative. Therefore, the latest document issue contains all updates made in previous issues.

Updates in Issue 01 (2013-09-30) Based on Product Version iODNCP V100R001C10

This issue is the first official release for SSC V100R001C10.

2 Overview

SSC210*X-XX-XX* series dome-style closures are used for optical cable connection and branching on a fiber to the *X*-optical distribution network (FTTx-ODN). The closures are classified into dome-style heat-shrink-sealing closures and dome-style mechanical-sealing closures by sealing mode. Dome-style heat-shrink-sealing closures are used for optical cable connection and branching on the optical access network, and provide functions including optical cable connection, straight-through connection, optical splitting, and splicing protection. With supportive accessories, such closures support pipe, manhole, hand hole, pole-mounting, aerial, and direct-buried installation modes. Dome-style mechanical-sealing closures are used for connection of feeder optical cables and distribution optical cables, and provide functions including connection, straight-through connection, optical splitting, and splicing protection for user access points, facilitating operation and maintenance. With supportive accessories, such closures support wall-mounting, pole-mounting, and aerial installation modes.

Figure 2-1 Application scenario of a dome-style closure
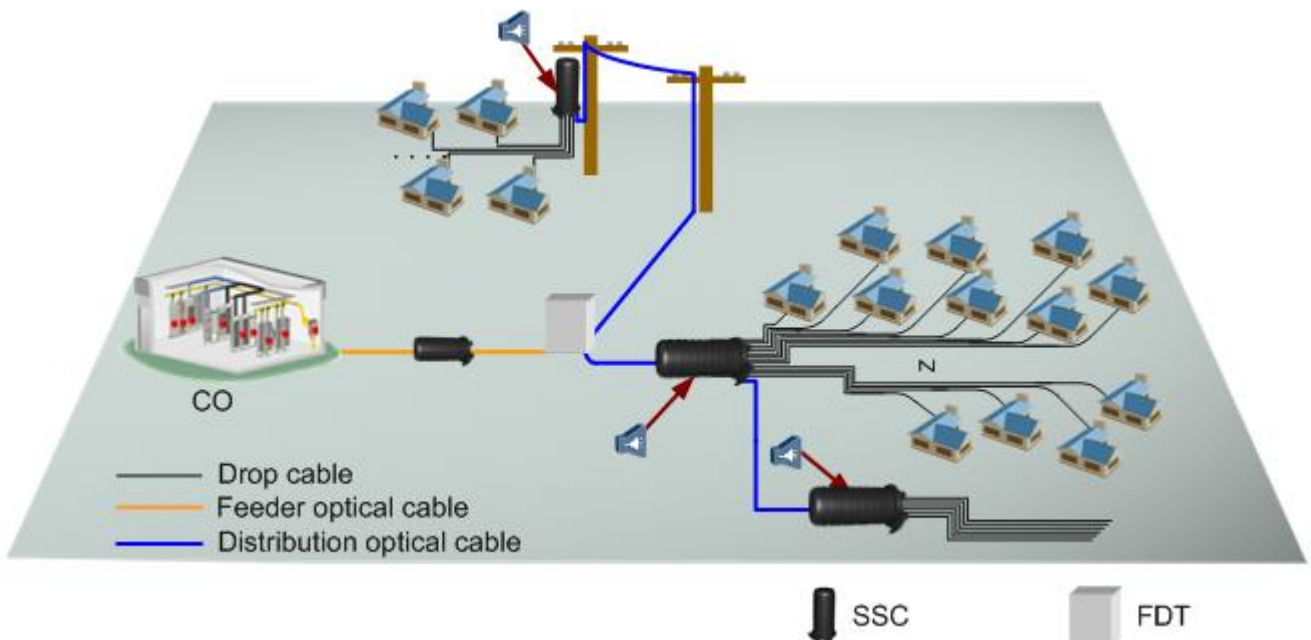
Features

- The closures provide rich functions that apply to various scenarios.

  The functions include splicing, optical splitting, and termination.

  Supported sealing modes include heat-shrink sealing and mechanical sealing.

  Such closures can be installed in pipes, manholes, and hand holes, against poles, and in direct-buried mode.

- The closures are easy to operate and install.

  The closures use staple bolts that are easy to open and fix.

  With function areas that are divided clearly, the closures can be operated based on function area.

  Splicing trays are strapped for protection.

  Splicing trays are stacked in a ladder shape and are easy to turn over, and positive stop holes on supports facilitate operations.

  Splicing trays are designed with four types of specifications.

  The distance between two straight-through apertures is the largest in the industry, protecting cables against fractures.

- Reliable protection performance enables the closures to apply to various environments.

  Compliant with IP68, the closures boast high sealing performance.

  The closures are highly corrosion-resistant.

  The closures comply with RoHS standards and TÜV Rhineland standards. (RoHS refers to the restriction of the use of certain hazardous substances in electrical and electronic equipment.)

📖 **NOTE**

The following figure shows the rules for naming the SSC*XXXX-XX-XX* series.
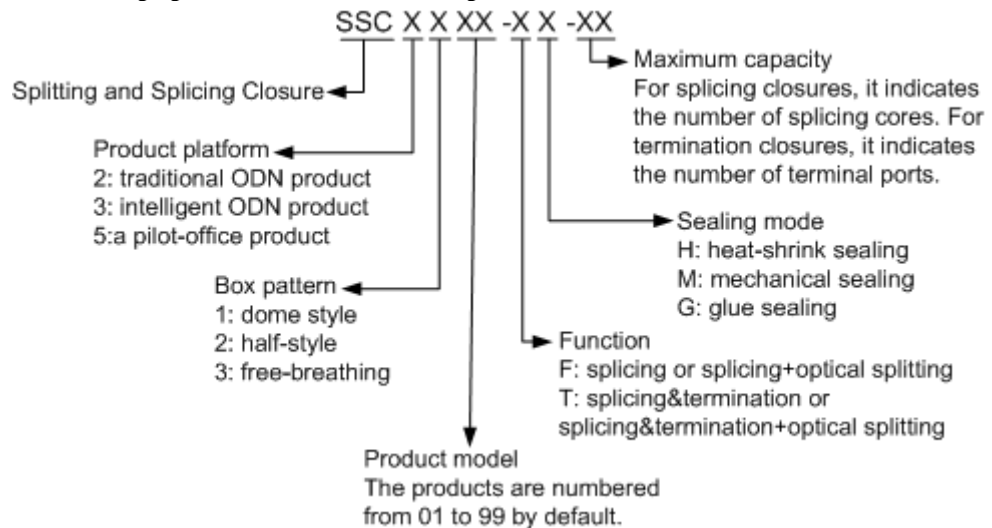
3 Product Introduction

About This Chapter

The SSC210*X-XX* dome-style series include nine types of products. They are classified into termination closures and splicing closures by function, and heat-shrink-sealing closures and mechanical-sealing closures by sealing mode.

The following table describes the product models and configuration scenarios of the dome-style closures.

Table 3-1 Product models and configuration scenarios

Dimensions		Φ183 x 420			Φ183 x 540			Φ238 x 560		
Model		SSC2 101-FM	SSC2 101-TM	SSC2 101-FH	SSC2 102-FM	SSC2 102-TM	SSC2 102-FH	SSC2 103-FM	SSC2 103-TM	SSC2 103-FH
Capacity		144	16	144	144	24	144	288	32	288
Number of functional modules	24-core splicing tray	6	2	6	6	3	6	12	6	12
	Termination panel capacity	/	20	/	/	30	/	/	48	/
	Straight-through cable storage tray	1	1	1	1	1	1	/	1	/
Selec	SPL9	√	√	√	√	√	√	√	√	√

Dimensions		Φ183 x 420			Φ183 x 540			Φ238 x 560		
table of optical splitters	102 series									
	SPL9105 series	/	√	/	/	√	/	/	√	/
Number of optical cable apertures	Straight-through apertures	1	1	1	1	1	1	1	1	1
	Common aperture	4	4	5	4	4	5	7	7	6

🛏 NOTE

- The installation position for one 24-core splicing tray supports two 12-core splicing trays.
- The SPL9102 can be installed in 12-core and 24-core splicing trays. The 12-core splicing trays support optical splitters with 1:8 and less split ratios.
- The SPL9105 can be installed in 24-core splicing trays. The quantity of SPL9105 that can be installed in a dome-style closure can be calculated based on the number of adapters in the closure.

3.1 Dome-Style Termination Closure

This topic describes the appearance, structures, functional modules, and route diagrams of the SSC210X-TM series dome-style termination closures.

3.2 Dome-Style Direct-Splicing Closure

This topic describes the appearance, structures, functional modules, and route diagrams of the SSC210X-FX series dome-style direct-splicing closures.

3.1 Dome-Style Termination Closure

This topic describes the appearance, structures, functional modules, and route diagrams of the SSC210X-TM series dome-style termination closures.

Dome-style termination closures adopt the mechanical sealing mode. They can be assembled to support termination, and support the SPL9105 preconnected bare optical splitters. Such closures support termination capacities of 20 cores, 30 cores, and 48 cores. The following table describes capacities of dome-style termination closures with different models.

Model	Maximum Termination Capacity (Unit: Core)	Adapter Type	Maximum Optical Splitting and Termination Capacity (Unit: Core)	Maximum Splicing Capacity (Unit: Core)	Sealing Mode
SSC2101-TM	20	SC/APC SC/UPC	16	48	Mechanical sealing
SSC2102-TM	30	SC/APC SC/UPC	24	72	Mechanical sealing
SSC2103-TM	48	SC/APC SC/UPC	32	144	Mechanical sealing

3.1.1 Appearance and Structure

Dome-style termination closures adopt the mechanical sealing mode, and support large-sized, medium-sized, and small-sized specifications. This topic describes the appearance and structure of dome-style termination closures.

The following figure shows the appearance of a dome-style termination closure.

Figure 3-2 Appearance of a dome-style termination closure

1. Box   2. Staple bolt   3. Cable apertures

1. Straight-through cable apertures   2. Common cable apertures

The following figure shows the structure of a dome-style termination closure.

Figure 3-3 Structure of a dome-style termination closure

Front view
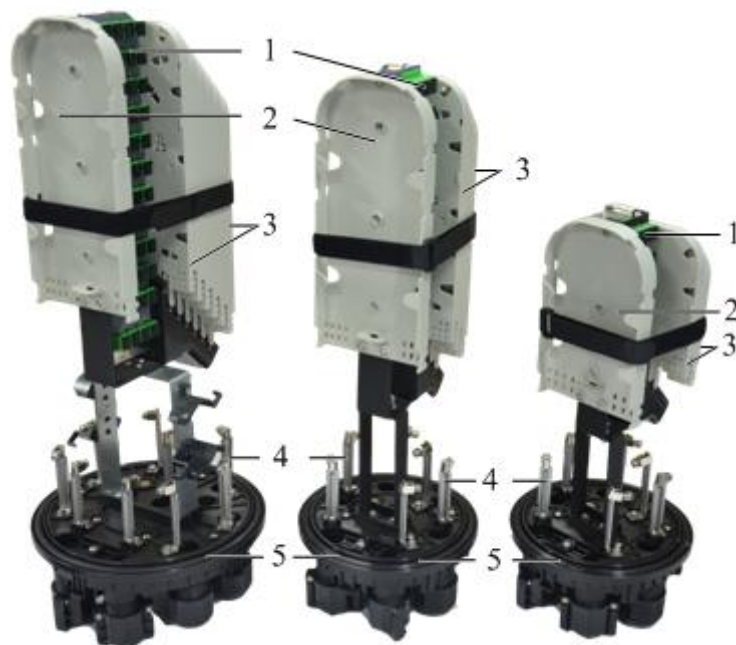
Rear view
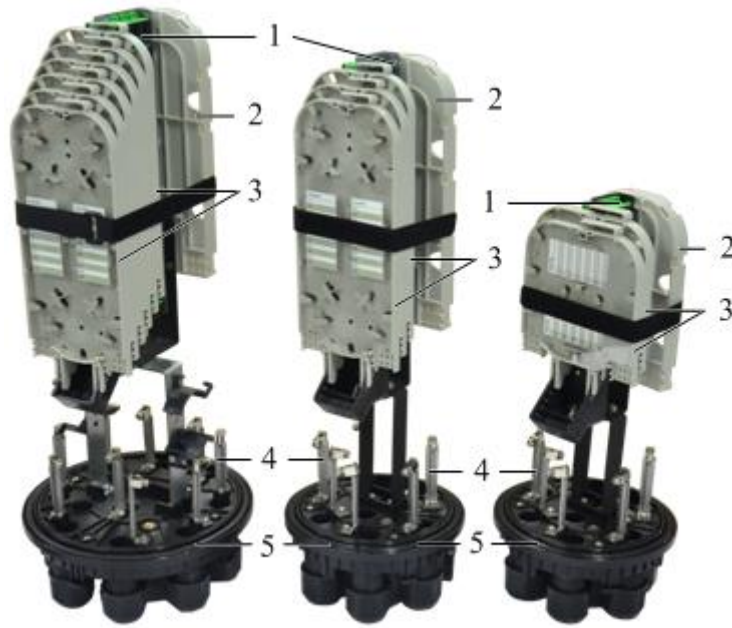
Side view
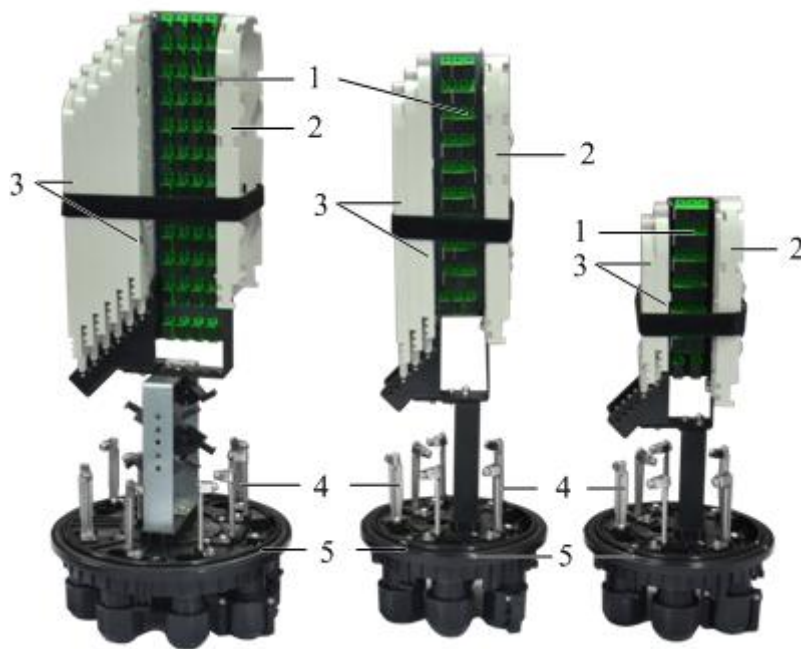
1. Termination panel   2. Straight-through tray   3. Splicing tray

4. Cable securing fittings   5. Gasket

3.1.2 Functional Modules

Functional modules of dome-style termination closures include straight-through trays, splicing trays, termination trays, optical splitters, and installation accessories.

Straight-through Tray

A straight-through tray is used to store uncut straight-through optical cables.

Figure 3-4 Appearance of straight-through trays

1. Small-sized straight-through tray   2. Large-sized straight-through tray

The following table lists specifications of straight-through trays.

Table 3-2 Specifications of straight-through trays

Item	Small-Sized Straight-through Tray	Large-Sized Straight-through Tray
Dimensions (H x W x D; unit: mm)	172 x 102 x 22	241 x 102 x 22
Net weight (unit: kg)	0.045	0.066
Maximum storage capacity	Eight 1.6-meter loose tubes	Twelve 1.6-meter loose tubes
Applicable box model	SSC2101-TM	SSC2102-TM, SSC2103-TM
Material	PC+ABS	PC+ABS
Color	Cold gray 3C	Cold gray 3C

Splicing Tray

A splicing tray is used to store straight-through bare fibers, splicing protection sleeves, and bare optical splitters.

Figure 3-5 Appearance of splicing trays
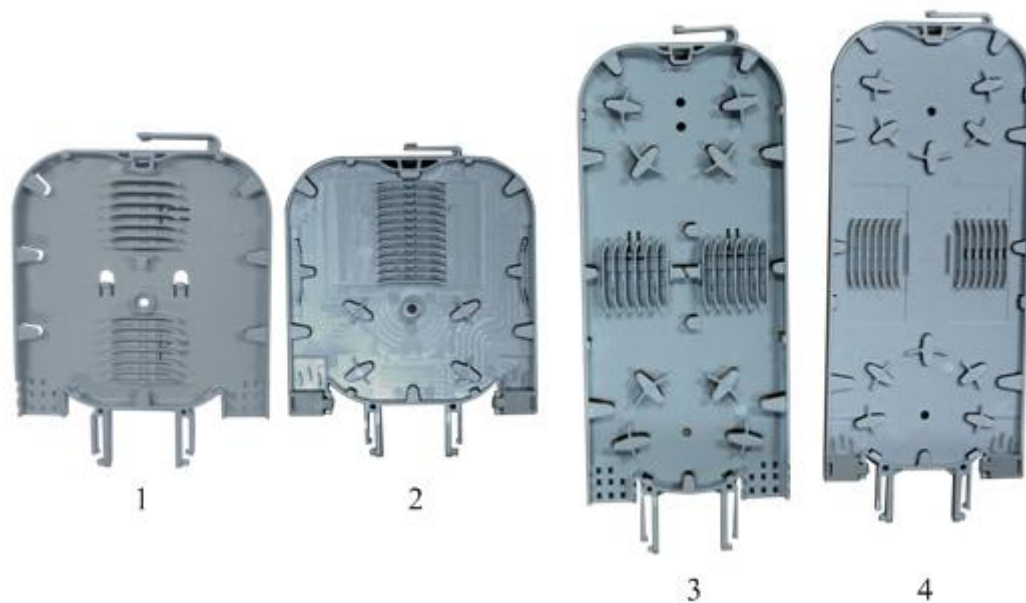
1. Small-sized 24-core splicing tray	2. Small-sized 12-core splicing tray	3. Large-sized 24-core splicing tray	4. Large-sized 12-core splicing tray

The following table lists specifications of splicing trays.

Table 3-3 Specifications of splicing trays

Item	Small-Sized 24-Core Splicing Tray	Small-Sized 12-Core Splicing Tray	Large-Sized 24-Core Splicing Tray	Large-Sized 12-Core Splicing Tray
Dimensions (H x W x D; unit: mm)	161 x 123 x 10.8	156 x 123 x 5.4	262 x 102 x 10.8	259 x 102 x 5.4
Net weight (unit: kg)	0.032	0.027	0.053	0.040
Splicing capacity (unit: core)	24	12	24	12
Applicable box model	SSC2101-TM	SSC2101-TM	SSC2102-TM, SSC2103-TM	SSC2102-TM, SSC2103-TM
Material	PC+ABS	PC+ABS	PC+ABS	PC+ABS
Color	Cold gray 3C	Cold gray 3C	Cold gray 3C	Cold gray 3C

Termination Panel

A termination panel is installed in the middle of a box to implement fiber termination (connecting pigtails and drop cables).

Figure 3-6 Appearance of termination panels
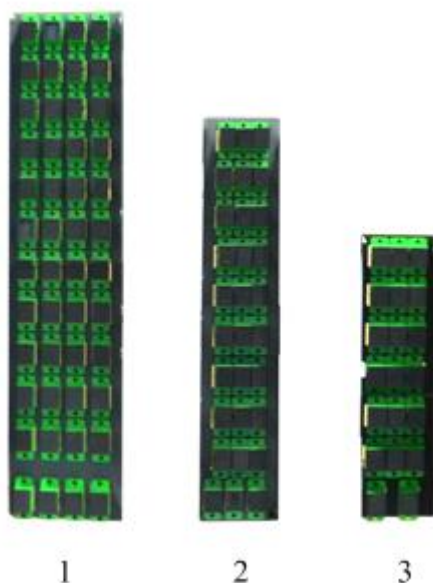
☐ NOTE

The figure uses the SC/APC as an example.

| 1. Termination panel with 48 cores | 2. Termination panel with 30 cores | 3. Termination panel with 20 cores |

The following table lists specifications of termination panels.

Table 3-4 Specifications of termination panels

Item	48-Core Termination Panel	30-Core Termination Panel	20-Core Termination Panel
Dimensions (H x W x D; unit: mm)	285 x 64 x 15	233.2 x 43.5 x 17.0	161.0 x 40.0 x 17.0
Termination capacity (for SC; unit: core)	48	30	20
Material	cold-rolled steel sheet	cold-rolled steel sheet	cold-rolled steel sheet
Color	Black (coated)	Black (coated)	Black (coated)

Item	48-Core Termination Panel	30-Core Termination Panel	20-Core Termination Panel
Adapter type	• SC/APC • SC/UPC	• SC/APC • SC/UPC	• SC/APC • SC/UPC
Applicable box model	SSC2103-TM	SSC2102-TM	SSC2101-TM

Optical Splitter

The dome-style termination closures can house the SPL9102 and SPL9105 optical splitters.

Figure 3-7 Appearance of SPL9102 and SPL9105

1. SPL9102   2. SPL9105

The following table lists specifications of SPL9102 and SPL9105.

Table 3-5 Specifications

Item	SPL9102	SPL9105
Package type	Bare encapsulated	Bare encapsulated
Pigtail diameter (unit: mm)	0.25	0.9
Fiber type	G.657A	G.657A
Adapter type	/	SC/UPC, SC/APC
Optical split ratio	1:2-1:32	1:2-1:32
Fiber length (unit: m)	1.5	1
Dimensions with packaging (H x W x D; unit: mm)	$269 \times 120 \times 18$	$360 \times 290 \times 60$

Installation Accessories

Installation accessories of dome-style closures include wall-mounting accessories, aerial mounting accessories, and pole-mounting accessories.

Figure 3-8 Installation accessories

1. Wall-mounting accessory   2. Aerial mounting accessory   3. Pole-mounting accessory

The following table lists specifications of installation accessories.

Table 3-6 Specifications

Item	Wall-mounting Accessory	Aerial Mounting Accessory	Pole-mounting Accessory
Dimensions (H x W x D; unit: mm)	230 x 158 x 18	240 x 158 x 18	230 x 200 x 18
Net weight (unit: kg)	0.135	0.145	0.235
Material	Stainless steel 304	Stainless steel 304	Stainless steel 304

3.1.3 Cable Route Diagrams

This topic shows the cable route diagrams of dome-style termination closures in various configuration scenarios.

Dome-Style Termination Closure Without Bare Optical Splitters That Have Connectors
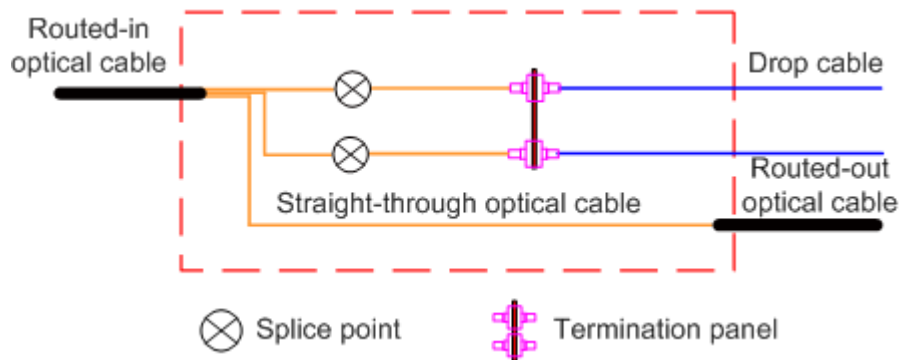
- Schematic diagram

- Route diagram

Figure 3-9 Front route diagram

Figure 3-10 Back route diagram

Dome-Style Termination Closure with Bare Optical Splitters That Have Connectors

- Schematic diagram

- Route diagram

Figure 3-11 Front route diagram
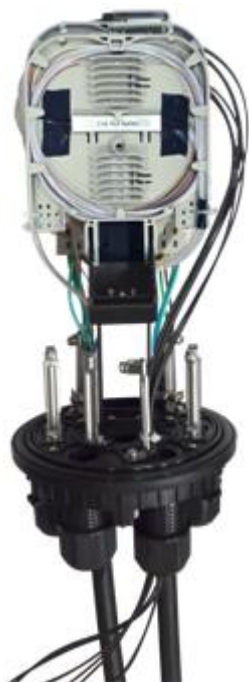
Figure 3-12 Side route diagram

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3.2 Dome-Style Direct-Splicing Closure

This topic describes the appearance, structures, functional modules, and route diagrams of the SSC210X-FX series dome-style direct-splicing closures.

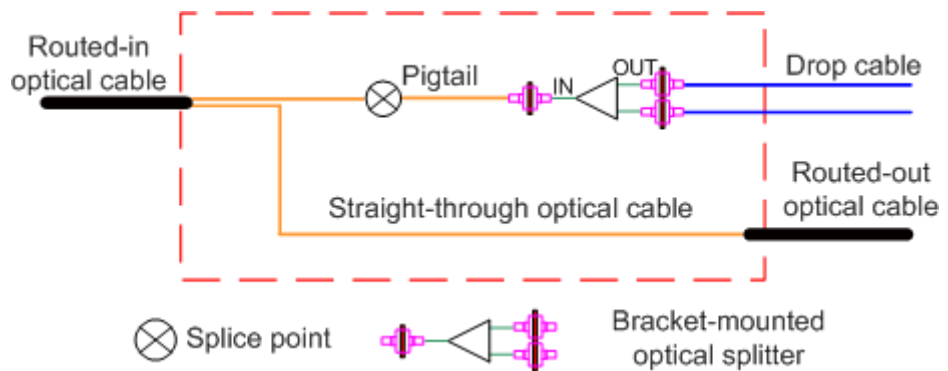Dome-style direct-splicing closures support mechanical sealing and heat-shrink sealing. They can be assembled to support direct splicing, and support the SPL9102 bare optical splitters. The following table describes capacities of dome-style direct-splicing closures with different models.

Model	Maximum Splicing Capacity (Unit: Core)	Sealing Mode
SSC2101-FM	144	Mechanical sealing
SSC2102-FM	144	Mechanical sealing
SSC2103-FM	288	Mechanical sealing
SSC2101-FH	144	Heat-shrink sealing
SSC2102-FH	144	Heat-shrink sealing
SSC2103-FH	288	Heat-shrink sealing

3.2.1 Appearance and Structure

Dome-style direct-splicing closures adopt the mechanical and heat-shrink sealing modes, and support large-sized, medium-sized, and small-sized specifications. This topic describes the appearance and structure of dome-style direct-splicing closures.

The following figure shows the appearance of a dome-style mechanical-sealing closure.

Figure 3-13 Appearance of a dome-style mechanical-sealing closure

1. Box   2. Staple bolt   3. Cable apertures

1. Straight-through cable apertures   2. Common cable apertures

The following figure shows the appearance of a dome-style heat-shrink-sealing closure.

Figure 3-14 Appearance of a dome-style heat-shrink-sealing closure
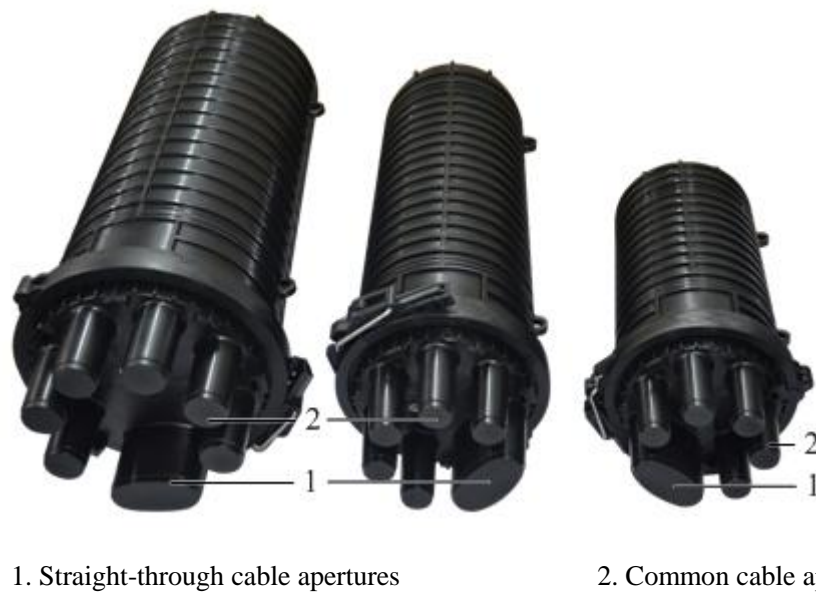
| 1. Box | 2. Staple bolt | 3. Cable apertures |

| 1. Straight-through cable apertures | 2. Common cable apertures |

The following figure shows the structure of a dome-style mechanical-sealing closure.

Figure 3-15 Structure of a dome-style mechanical-sealing closure

Front view

Rear view

1. Straight-through area	2. Straight-through tray	3. Splicing tray
4. Cable securing fittings	5. Gasket	

Figure 3-16 Structure of a dome-style heat-shrink-sealing closure

Front view

Rear view

1. Straight-through area   2. Straight-through tray   3. Splicing tray

4. Cable securing fittings   5. Gasket

3.2.2 Functional Modules

Functional modules of dome-style direct-splicing closures include straight-through trays, splicing trays, optical splitters, and installation accessories.

Straight-through Tray

A straight-through tray is used to store uncut straight-through optical cables.

Figure 3-17 Appearance of straight-through trays

1. Small-sized straight-through tray   2. Large-sized straight-through tray

The following table lists specifications of straight-through trays.

Table 3-7 Specifications of straight-through trays

Item	Small-Sized Straight-through Tray	Large-Sized Straight-through Tray
Dimensions (H x W x D; unit: mm)	172 x 102 x 22	241 x 102 x 22
Net weight (unit: kg)	0.045	0.066
Maximum storage capacity	Eight 1.6-meter loose tubes	Twelve 1.6-meter loose tubes
Applicable box model	SSC2101-FM, SSC2101-FH	SSC2102-FM, SSC2102-FH
Material	PC+ABS	PC+ABS
Color	Cold gray 3C	Cold gray 3C

Splicing Tray

A splicing tray is used to store straight-through bare fibers, splicing protection sleeves, and bare optical splitters.

Figure 3-18 Appearance of splicing trays
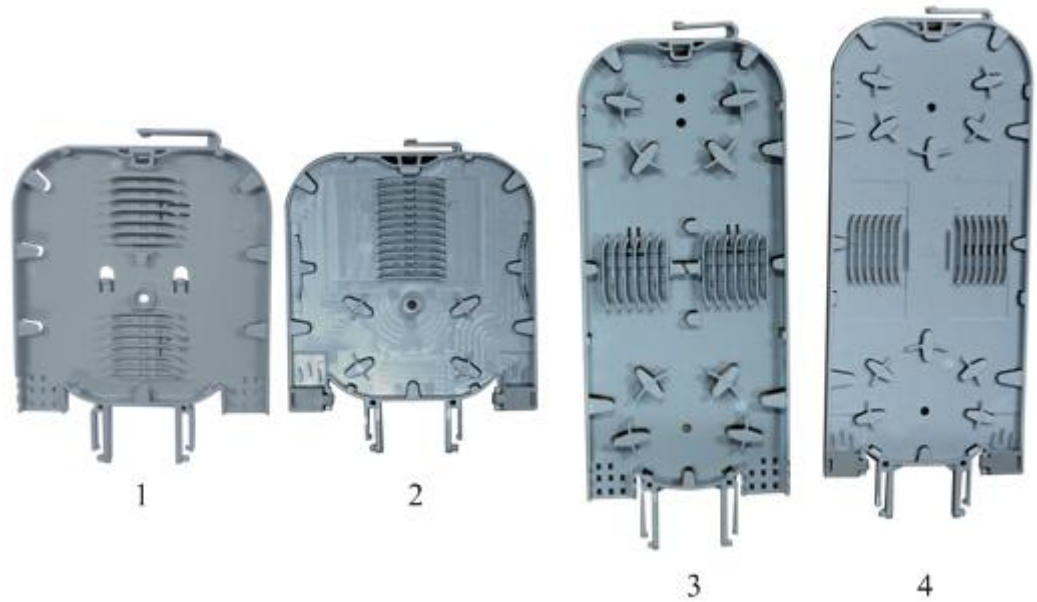
| 1. Small-sized 24-core splicing tray | 2. Small-sized 12-core splicing tray | 3. Large-sized 24-core splicing tray | 4. Large-sized 12-core splicing tray |

The following table lists specifications of splicing trays.

Table 3-8 Specifications of splicing trays

| Item	Small-Sized 24-Core Splicing Tray	Small-Sized 12-Core Splicing Tray	Large-Sized 24-Core Splicing Tray	Large-Sized 12-Core Splicing Tray
Dimensions (H x W x D; unit: mm)	161 x 123 x 10.8	156 x 123 x 5.4	262 x 102 x 10.8	259 x 102 x 5.4
Net weight (unit: kg)	0.032	0.027	0.053	0.040
Splicing capacity (unit: core)	24	12	24	12
SPL9102 installation capacity	3 x 1:4, 2 x 1:8, or 1 x 1:16	2 x 1:4 or 1 x 1:8	3 x 1:4, 2 x 1:8, or 1 x 1:16	2 x 1:4 or 1 x 1:8
Applicable box model	SSC2101-FM, SSC2101-FH	SSC2101-FM, SSC2101-FH	SSC2102-FM, SSC2102-FH, SSC2103-FM, SSC2103-FH	SSC2102-FM, SSC2102-FH, SSC2103-FM,

Item	Small-Sized 24-Core Splicing Tray	Small-Sized 12-Core Splicing Tray	Large-Sized 24-Core Splicing Tray	Large-Sized 12-Core Splicing Tray
				SSC2103-FH
Material	PC+ABS	PC+ABS	PC+ABS	PC+ABS
Color	Cold gray 3C	Cold gray 3C	Cold gray 3C	Cold gray 3C

Optical Splitter

Dome-style direct-splicing closures house the SPL9102 optical splitters.

Figure 3-19 Appearance of SPL9102
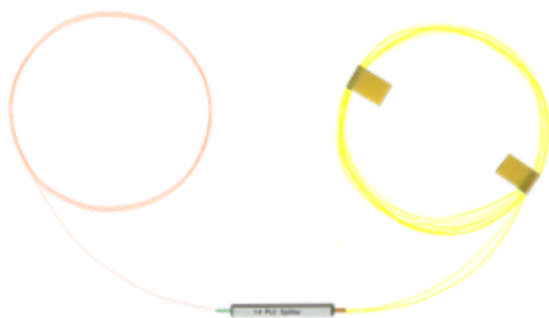
The following table lists specifications of SPL9102.

Table 3-9 Specifications

Item	SPL9102
Package type	Bare encapsulated
Pigtail diameter (unit: mm)	0.25
Fiber type	G.657A
Adapter type	/
Optical split ratio	1: 2 to 1:32
Fiber length (unit: m)	1.5
Dimensions with packaging (H x W x D; unit: mm)	269 x 120 x 18

Installation Accessories

Installation accessories of dome-style closures include wall-mounting accessories, aerial mounting accessories, and pole-mounting accessories.

Figure 3-20 Installation accessories

1. Wall-mounting accessory   2. Aerial mounting accessory   3. Pole-mounting accessory

The following table lists specifications of installation accessories.

Table 3-10 Specifications

Item	Wall-mounting Accessory	Aerial Mounting Accessory	Pole-mounting Accessory
Dimensions (H x W x D; unit: mm)	230 x 158 x 18	240 x 158 x 18	230 x 200 x 18
Net weight (unit: kg)	0.135	0.145	0.235
Material	Stainless steel 304	Stainless steel 304	Stainless steel 304

3.2.3 Cable Route Diagrams

This topic shows the cable route diagrams of dome-style direct-splicing closures in various configuration scenarios.

Dome-Style Direct-Splicing Closure Without Bare Optical Splitters
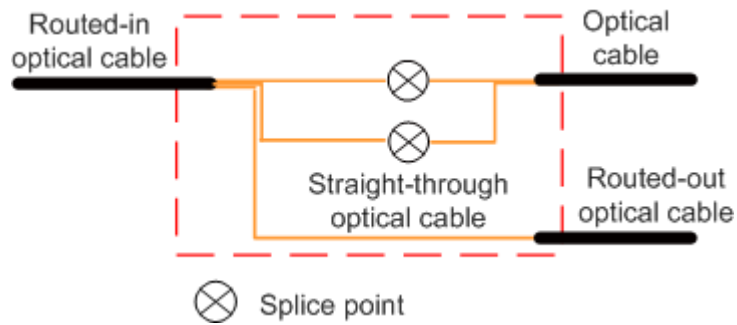
- Schematic diagram

- Route diagram

Dome-Style Direct-Splicing Closure with Bare Optical Splitters

- Schematic diagram

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- Route diagram

4 Technical Specifications

Specifications

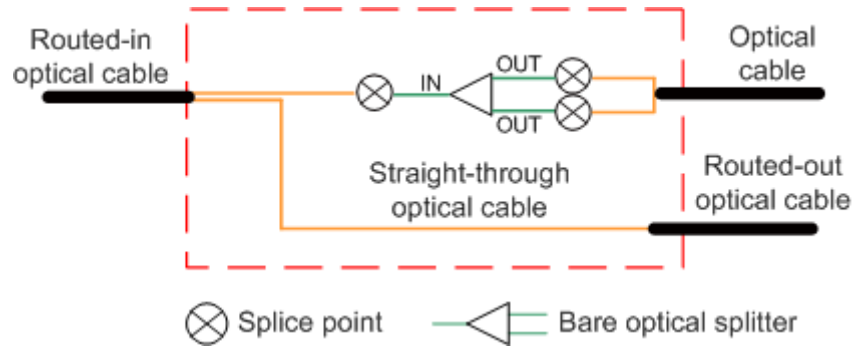The following table describes specifications of dome-style termination closures.

Table 4-1 Specifications of dome-style termination closures

Model	SSC2101-TM	SSC2102-TM	SSC2103-TM
Dimensions (H x W x D; unit: mm)	Φ183 x 420	Φ183 x 540	Φ238 x 560
Dimensions with packaging (H x W x D; unit: mm)	545 x 255 x 265	665 x 255 x 265	680 x 305 x 325
Net weight (unit: kg)	2.1	2.5	3.9
Gross weight (unit: kg)	3.5	3.9	5.5
Number of cable apertures	1+4	1+4	1+7
Cable size (unit: mm)	Bundle optical cable: 5 to 20	Bundle optical cable: 5 to 20	Bundle optical cable: 5 to 20
Installation mode	Wall-mounting, aerial mounting, pole-mounting	Wall-mounting, aerial mounting, pole-mounting	Wall-mounting, aerial mounting, pole-mounting
Material	PA66+25%GF	PA66+25%GF	PA66+25%GF
Adapter type	SC	SC	SC
Color	Black	Black	Black
Protection rating	IP68	IP68	IP68
Flame-retardant rating	UL94-HB	UL94-HB	UL94-HB

The following table describes specifications of dome-style direct-splicing closures.

Table 4-2 Specifications of dome-style direct-splicing closures

Model	SSC21011-FM	SSC2102-FM	SSC2103-FM	SSC2101-FH	SSC2102-FH	SSC2103-FH
Dimensions (H x W x D; unit: mm)	Φ183 x 420	Φ183 x 540	Φ238 x 560	Φ183 x 420	Φ183 x 540	Φ238 x 560
Dimensions with packaging (H x W x D; unit: mm)	545 x 255 x 265	665 x 255 x 265	680 x 305 x 325	545 x 255 x 265	665 x 255 x 265	680 x 305 x 325
Net weight (unit: kg)	2.1	2.5	3.9	1.7	2.1	3.5
Gross weight (unit: kg)	3.5	3.9	5.5	3.0	3.4	5.0
Number of cable apertures	1+4	1+4	1+7	1+5	1+5	1+6
Cable size (unit: mm)	Bundle optical cable: 5 to 20	Bundle optical cable: 5 to 20	Bundle optical cable: 5 to 20	Bundle optical cable: 8 to 20	Bundle optical cable: 8 to 20	Bundle optical cable: 10 to 28
Installation mode	Wall-mounting, aerial mounting, pole-mounting	Wall-mounting, aerial mounting, pole-mounting	Wall-mounting, aerial mounting, pole-mounting	Wall-mounting, aerial mounting, pole-mounting	Wall-mounting, aerial mounting, pole-mounting	Wall-mounting, aerial mounting, pole-mounting
Material	PA66+25%GF	PA66+25%GF	PA66+25%GF	PA66+25%GF	PA66+25%GF	PA66+25%GF
Adapter type	/	/	/	/	/	/
Color	Black	Black	Black	Black	Black	Black
Protection rating	IP68	IP68	IP68	IP68	IP68	IP68
Flame-retardant rating	UL94-HB	UL94-HB	UL94-HB	UL94-HB	UL94-HB	UL94-HB

Environment Specifications

The following table describes environment specifications of dome-style closures.

Table 4-3 Environment specifications of dome-style closures

Item	Specifications
Operating temperature	-40℃ to +65℃
Storage temperature	-40℃ to +70℃
Atmospheric pressure	76 kPa to 106 kPa
Relative humidity	95%

Standards Compliance

The following table lists the standards to which the dome-style closures conform.

Table 4-4 Standards compliance

Standards	Description
GB/T 3873-1983	General specifications for products packaging of communication equipment
ITU-T L0.13	Performance requirements for passive optical nodes: Sealed closures for outdoor environments (OA) (major standards)
IEC 62134-1-2002	Fiber optic enclosures - Part 1: Generic specification (reference standards)
ITU.T L.51	Passive node elements for fiber optic networks – General principles and definitions for characterization and performance evaluation (reference standards)
GR-771core.002	Generic Requirements for Fiber Optic Splice Closures: Aerial-Mounted Products. (reference standards)
UL94	Test for flammability of Plastic Materials for parts in Devices and Appliances
ETS 3000 19-2-2	Environmental conditions and environmental test for telecommunications equipment; Part 2-2: Specification of environmental tests Transportation CLASS 2.3 (Public Transportation)
IEC 60529	Degrees of protection provided by enclosures (IP Code) IP54
YD/T 814.1-2004	Closure for optical fiber cables Part1: Closure for outdoor optical fiber cables (reference standards)

5 Acronyms and Abbreviations

APC	angle physical contact
FMC	field-mountable optical connector
FTTH	fiber to the tome
ODN	optical distribution network
OLT	optical line terminal
ONT	optical network terminal
SC	square connector
SPL	splitter
UPC	ultra physical contact
UV	ultraviolet